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10/578,062	05/02/2006	Johan Lub	NL031288	5046

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EXAMINER	
RAMIREZ, ARMANDO P	
ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
12/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,062	<b>Applicant(s)</b> LUB ET AL.
	<b>Examiner</b> ARMANDO P. RAMIREZ	<b>Art Unit</b> 1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 11/26/2008.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-15 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 02 May 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-166/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I claims 1-5 in the reply filed on 11/26/08 is acknowledged.

### *Priority*

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

3. The disclosure is objected to because of the following informalities: On pages 9-10, the applicant describes Fig. 1, twice, once on Page 9, and once again on Page 10. On page 14, line 26 the applicant states "Cyc," but should read Cy.

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Objections*

4. **Claim 5 is objected to** because of the following informalities:

With respect to Claim 5, "basedlyotropic," should read: based lyotropic.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claim 3 is rejected under 35 U.S.C. 112**, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**With respect to Claim 3 (currently amended)**, the applicant claims orientation of a smectic phase Sx wherein X is not A or C, however, the applicant fails to define what he or she is intending to claim by "Sx wherein X is not A or C," and as such renders the instant claim indefinite.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Naito (US 5,958,291).**

**Naito teaches with respect to Claim 1 (original)**, the claimed guest-host polarizer (GH liquid crystal layer, considered to be the guest-host polarizer, Abstract, line 9) comprising an

**Comment [ARP1]:** Given teaches guest hosts polymers that are water soluble, and also fails to teach the specific molecular structures that the applicant describes in the specification. One is not supposed to read limitations from the specification into the claims. The MPEP states "Broad claimed and unclaimed aspects of the invention described in the specification should be searched if there is a reasonable expectation that the unclaimed aspects may be later claimed." Hence, in reading the claims in light of the specification, Naito teaches the claimed subject matter, that is both claimed, and that subject matter that the applicant might claim in amending the broad claims. If this is not the correct approach, please let me know and I will change it to Given?

oriented (align, considered to be oriented, Col. 17, line 4) polymer film (polymerize the monomer, considered to be polymer film, Col. 19, lines 58-65), the claimed oriented polymerized liquid crystal host (fluorinated methacrylate monomer....polymerize the monomer, considered to be the polymerized liquid crystal host, Example 8, Col. 19, lines 51-58), and the claimed dichroic light-absorbing guest (anthraquinone-based dichroic dye, considered to be the dichroic light-absorbing guest, Example 8, Col. 19, lines 45-46) dispersed (dissolved, considered to be dispersed, Example 8, Col. 19, line 46) and oriented (rubbing treatment so as to align, considered to be oriented, Example 1, Col. 14, lines 43-44) in the host, the oriented polymer film having a dichroic ratio of about 15 or more (contrast ratio, considered to be the dichroic ratio, Col. 14, line 55).

**With respect to the claimed dichroic ratio of about 15 or more, as Naito teaches contrast ratios of 5.9 - 6.7 (Examples 1-6), the range as claimed by the applicant is considered to be taught by Naito.**

**With respect to Claim 5 (currently amended),** Naito and Gvon teach the claimed dichroic light-absorbing guest is a blue absorbing dichroic colorant (yellow anthraquinone-based dichroic dye, Col. 20, line 22), and the claimed anthraquinone-based lyotropic liquid crystal (Col. 3, lines 39-43). A blue absorbing dichroic colorant would appear yellow.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**9. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito (US 5,958,291).**

**With respect to Claim 2 (original),** Naito and Gvon teach the invention set forth above, but do not specifically teach polymerizable liquid crystal.

Although Naito does not state that the liquid crystal is polymerizable, Naito does teach that a methacrylate monomer is polymerized (Col. 19, Example 8, lines 50-60). Hence, at the time of the invention it would have been obvious to one of ordinary skill in the art to have structurally modified the monomer in order to covalently bond the liquid crystal molecule to it, and as such be incorporated as part of the covalent network of the guest substrate. The motivation for doing so would be to increase the durability of the guest-host polymer system and ultimately the life-time of the display.

**With respect to Claim 3 (currently amended),** Naito and Gvon teach the invention set forth above, but do not specifically teach the claimed orientation of the oriented film is or corresponds to the orientation of a smectic phase S<sub>X</sub> wherein X is not A or C.

Naito, however does teach that, "In the display mode, a mixture comprising a liquid crystal exhibiting a chiral smectic phase and a dichroic dye is employed in a liquid crystal layer," (Col. 2, line 14) indicating that the liquid crystal polarizer was oriented in a smectic phase, which establishes smectic phase as result-effective variable that is subject to routine experimentation for the purpose of providing the desired properties to the film.

Hence, at the time of the invention it would have been obvious to one of ordinary skill in the art to have modified the orientation of the liquid crystal polarizer in order to tune the polarization for the intended purpose.

**With respect to Claim 4 (currently amended),** Naito and Gvon teach the claimed thickness of about 10 µm or less (several tens micrometers, Col. 3, line 5). The range as claimed by the applicant overlaps that taught by Naito.

Naito and Gvon teach "several tens micrometers," and not specifically less, however, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness of the polarizer in order to reduce the amount of material and hence manufacturing costs for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F2d. 272, 205 USPQ 215 (CCPA 1980).

#### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO P. RAMIREZ whose telephone number is (571)270-7083. The examiner can normally be reached on Mon-Thur 8 AM - 7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571)272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1794

/A. P. R./